UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/030,095 | 01/15/2002 | Keita Suzuki | 011719 | 4433 |

23850 7590 06/24/2004

ARMSTRONG, KRATZ, QUINTOS, HANSON & BROOKS, LLP
1725 K STREET, NW
SUITE 1000
WASHINGTON, DC 20006

| EXAMINER | |
|---|---|
| PATTERSON, MARC A | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 1772 | |

DATE MAILED: 06/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/030,095 | SUZUKI, KEITA | |
| | Examiner | Art Unit | |
| | Marc A Patterson | 1772 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *20 April 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *4-8 and 11-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *4-8 and 11-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### NEW REJECTIONS

1. The amendment filed April 20, 2004 is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: The original disclosure contains no language indicating that the barrier layer 'does not comprise a polyamide' as claimed in amended Claim 14.

Applicant is required to cancel the new matter in the reply to this Office Action.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 14 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 14 is directed to a barrier layer which does not comprise polyamide. However, polyamide is not excluded from the barrier layer in the original specification.

## *Claim Rejections - 35 USC § 103*

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 4 – 6 and 11 – 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hunter (U.S. Patent No. 5,891,373) in view of Spohn (U.S. Patent No. 6,127,478).

With regard to Claims 4 and 13, Hunter discloses a multi – layer resin tube used as a fuel tube for automobiles (column 1, lines 8 – 20) comprising a body layer of a thermoplastic resin (outer layer; column 2, lines 6 – 19) comprising polyamide (column 2, lines 12 – 14) and a layer provided on an inner surface of the body layer (multi – layer adhesive layer; column 2, lines 30 – 53) comprising an outermost layer attached to the inside surface of the body layer (column 2, lines 20 – 29) and an innermost layer including the inside surface of the multi – layer resin tube (it is bonded directly to, and therefore includes, the layer which comprises the inside surface of the tube; column 2, lines 35 – 53); the two layers each have two components, fluoropolymer and nylon (column 2, lines 35 – 41) and the outermost layer has one component at a higher concentration than the innermost layer and the other component at a lower concentration than the innermost layer (the nylon component; column 2, lines 27 – 29 and 51 – 53); the tube therefore comprises two layers each comprising two adhesive components, with one adhesive component present in a plurality of gradient layers at a concentration that decreases in each sequential layer from the outermost gradient layer having a highest concentration to an innermost layer having a

lowest concentration of the adhesive component. Hunter fails to disclose adhesive layers which are barrier layers.

Spohn teaches the use of a layer comprising fluoropolymer and nylon (column 2, lines 18 – 49) which is a barrier layer (column 4, lines 5 – 18) for the purpose of making a fuel hose which is resistant to chemical attack (column 5, lines 35 – 44). Therefore one of ordinary skill in the art would have recognized the advantage of providing for innermost and outermost layers having the barrier properties of Spohn in Hunter, which is a fuel hose, depending on the desired resistance to chemical attack of the end product.

It therefore would have been obvious for one of ordinary skill in the art at the time Applicant's invention was made to have provided for an innermost and outermost layers which are barrier layers in Hunter (therefore a multi – layer barrier comprising two barrier components) in order to make a fuel hose which is resistant to chemical attack as taught by Spohn. Hunter would therefore comprise two layers each comprising two barrier components, with one barrier component present in a plurality of gradient layers at a concentration that decreases in each sequential layer from the outermost gradient layer having a highest concentration to an innermost layer having a lowest concentration of the barrier component.

With regard to Claims 5 – 6 and 15, the layer which is taught by Spohn comprises an ethylene tetrafluroethylene which is modified (column 5, lines 45 – 63); a modified fluorine resin is therefore a barrier component and adhesive component.

With regard to Claims 11 – 12, Hunter fails to disclose an outermost layer having the barrier component at 1 – 10% by weight and innermost layer having the adhesive component at 0.5 to 3% by weight. However, Hunter discloses an outermost layer having the barrier

component at 40% by weight and innermost layer having the barrier component at greater than 40% by weight (column 2, lines 20 – 29) and teach the use of the layer to obtain improved adhesion (column 3, lines 25 – 26). Therefore, one of ordinary skill in the art would have recognized the utility of varying the concentrations of the components in the layers to obtain a desired adhesion. Therefore, adhesion would be readily determined through routine optimization of concentrations of the components in the layers by one having ordinary skill in the art depending on the desired end use of the product.

It therefore would be obvious for one of ordinary skill in the art to vary the concentrations of the components in the layers in order to obtain a desired adhesion, since the adhesion would be readily determined through routine optimization by one having ordinary skill in the art depending on the desired end result as shown by Hunter.

With regard to Claim 14, the barrier layer comprises a non – gradient layer that does not comprise polyamide (polytetrafluoroethylene; column 2, line 60).

6. Claims 7 – 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hunter (U.S. Patent No. 5,891,373) in view of Spohn (U.S. Patent No. 6,127,478) and further in view of Yokoe et al (U.S. Patent No. 5,919,326).

Hunter and Spohn disclose a fuel hose comprising a barrier layer as discussed above. With regard to Claims 7 – 8, Hunter and Spohn fail to disclose a barrier layer comprising conductive carbon black.

Yokoe et al teach the use of a barrier layer comprising conductive carbon black in a fuel hose (column 5, lines 19 – 35) for the purpose of obtaining a hose which dissipates static charge

(column 5, lines 19 – 35). The advantage of providing for the conductive carbon black of Yokoe et al in Hunter and Spohn, which is a fuel hose, would therefore be obvious to one of ordinary skill in the art depending on the desired static charge dissipation of the end product.

It therefore would have been obvious for one of ordinary skill in the art at the time Applicant's invention was made to have provided for a barrier layer comprising conductive carbon black in Hunter and Spohn in order to obtain a hose which dissipates static charge as taught by Yokoe et al.

## ANSWERS TO APPLICANT'S ARGUMENTS

7. Applicant's arguments regarding the 35 U.S.C. 112 second paragraph rejection of Claims 4 – 8 and 11 – 12, of record in the previous Action, have been considered and have been found to be persuasive. The rejections are therefore withdrawn.

Applicant's arguments regarding the 35 U.S.C. 103(a) rejection of Claims 4 – 6 and 11 – 12 as being unpatentable over Hunter (U.S. Patent No. 5,891,373) in view of Spohn (U.S. Patent No. 6,127,478), of record in the previous Action, have been carefully considered but have not been found to be persuasive for the reasons set forth below.

*I. At page 2, paragraph 3 of the Office Action, claims 4 – 8 and 10 – 12 have been rejected under 35 U.S.C. section 112, second paragraph, as being indefinite.*

As stated above, Applicant's arguments regarding the 35 U.S.C. 112 second paragraph rejection of Claims 4 – 8 and 11 – 12, of record in the previous Action, have been considered and have been found to be persuasive. The rejections are therefore withdrawn.

However, as discussed above Claim 14 contains a limitation directed to the barrier layer not comprising polyamide, an aspect of the claim that was not discussed in the original specification. The amendment therefore constitutes new matter. The new matter is considered in the new rejection above.

*II. At page 3, paragraph 5 of the Office Action, the Examiner rejects claims 4 – 6 and 10 – 12 as being unpatentable over Hunter (U.S. Patent No. 5,891,373) in view of Spohn (U.S. Patent No. 6,127,478).*

Applicant argues, on page 13 of Paper No. 7, that there is no motivation to combine Hunter and Spohn; Hunter teaches away from any construct not comprising two adhesive layers, Applicant argues, whereas Spohn teaches a blend which is advantageous because a hose can be fabricated from the blend without the use of adhesive layers.

However, as stated on page 2 of the previous Action, Spohn teaches the use of a layer which is a blend of fluoropolymer and nylon (column 2, lines 18 – 49) which is a barrier layer (column 4, lines 5 – 18) for the purpose of making a fuel hose which is resistant to chemical attack (column 5, lines 35 – 44). Therefore, one of ordinary skill in the art would have recognized the advantage of providing for a blend of fluoropolymer and nylon which has the barrier properties of Spohn in Hunter, which is a fuel hose comprising layers which are blends of fluoropolymer and nylon, in order to obtain a hose which is resistant to chemical attack as taught by Spohn.

Applicant also argues on page 13 that the combination of Spohn would yield a barrier layer having one layer, because the barrier layer of Spohn comprises only one layer.

However, as stated above, it would be obvious to one of ordinary skill in the art to provide for both layers of Hunter, which comprise a blend of fluoropolymer and nylon, with the barrier properties taught by Spohn, in order to obtain a hose which is resistant to chemical attack as taught by Spohn.

Applicant also argues on page 13 that nothing in Hunter or Spohn suggests providing the blend of Spohn as an inside barrier layer on the inner surface of Hunter's tube.

However, as stated on page 2 of the previous Action, the innermost layer disclosed by Hunter and Spohn includes the inside surface of the multi – layer resin tube because it is bonded directly to, and therefore includes, the layer which comprises the inside surface of the tube (column 2, lines 35 – 53).

Applicant also argues on page 13 that the combination of Hunter and Spohn produces a construct having an outer nylon layer, two nylon – fluoropolymer adhesive layers, a blend barrier layer and a conductive inner layer, and therefore would not produce the present invention. However, as stated above, the construct which would be produced would comprise two nylon – fluoropolymer adhesive layers which are also barrier layers, thereby producing the present invention.

*IV. At page 4, paragraph 6, of the Office Action, claims 7 and 8 have been rejected under 35 U.S.C. section 103(a) as being unpatentable over Hunter in view Spohn, and further in view of Yokoe et al (U.S. Patent No. 5,919,326).*

Applicant also argues on page 14, that neither Hunter nor Spohn suggests a multilayer barrier layer wherein the concentration of the adhesive component decreases from the outermost

layer to the innermost layer of the barrier layer, or wherein polyamide / nylon is excluded from the blend as required by the present claims.

However, as stated above, the claims prior to amendment did not include newly submitted Claims 13 and 15, which are directed to a barrier layer which is 'present in a plurality of gradient layers at a concentration that increases in each sequential gradient layer.' The amendment would therefore require further search and consideration to be completely addressed.

Applicant also argues, on page 15, that Hunter does not require a conductive layer other than the disclosed innermost layer, and therefore does not address Claims 7 – 8.

However, as stated on page 3 of the previous Action, Yokoe et al teach the use of a barrier layer comprising conductive carbon black in a fuel hose (column 5, lines 19 – 35) for the purpose of obtaining a hose which dissipates static charge (column 5, lines 19 – 35). Therefore, one of ordinary skill in the art would have recognized the advantage of providing for a barrier layer comprising the conductive carbon black taught by Yokoe et al in Hunter, which is a fuel hose, depending on the desired charge dissipation of the end product as taught by Yokoe et al.

Applicant also argues on page 15 that the combination of Hunter and Yokoe et al is improper for the same reasons that the combination of Hunter and Spohn is improper, that Yokoe does not suggest a multilayer barrier layer wherein the concentration of the adhesive component decreases from the outermost layer to the innermost layer of the barrier layer.

However, as stated above, the claims prior to amendment did not include newly submitted Claims 13 and 15, which are directed to a barrier layer which is 'present in a plurality of gradient layers at a concentration that increases in each sequential gradient layer.' The amendment would therefore require further search and consideration to be completely addressed.

***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc Patterson, whose telephone number is (571) 272 – 1497. The examiner can normally be reached on Monday through Friday from 8:30 AM to 5:00 PM. If attempts to reach the examiner by phone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached at (571) 272 – 1498. FAX communications should be sent to (703) 872-9310. FAXs received after 4 P.M. will not be processed until the following business day.

Marc A. Patterson, PhD.
Marc Patterson
Art Unit 1772

/Harold Pyon/
HAROLD PYON
SUPERVISORY PATENT EXAMINER
1772

6/21/04